IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently Amended) A method for determining the likelihood that a human patient suspected of SMEI does or does not have SMEI comprising:

(1) ~~testing~~ screening a patient sample for the existence of an alteration in the SCN1A gene of the patient, including in a regulatory region of the gene, by sequencing the SCN1A gene;

(2) (a) terminating the process ~~with an inconclusive diagnosis~~ if no alteration is found, thereby establishing that the patient likely does not have SMEI; or

(b) identifying the alteration; and

(3) ascertaining whether the alteration, when one is detected, ~~is known to be~~ has previously been detected in a patient clinically diagnosed with SMEI and is therefore considered SMEI associated or has previously been detected in a patient not diagnosed with SMEI and is therefore considered non-SMEI associated or is not ~~known~~ considered to be either; wherein

(a) ~~a diagnosis which will indicate~~ the patient is categorized as having a high probability of having SMEI ~~is made where~~ when the alteration is ~~known to be~~ SMEI associated;

(b) ~~a diagnosis which will indicate~~ the patient is categorized as having a low probability of having SMEI ~~is made where~~ when the alteration is non-SMEI associated; or

(c) further analysis is undertaken to establish ~~whether the alteration is a SMEI associated or a non-SMEI associated alteration~~ the likelihood the patient suspected of SMEI does or does not have SMEI when the detected alteration is not considered to be either SMEI associated or non-SMEI associated,

wherein the detection of a SMEI associated alteration establishes that a patient suspected of SMEI likely does have SMEI.

2. (Currently amended) A method as claimed in claim 1 further comprising establishing whether the alteration would result in a ~~major disruption~~ truncating alteration to a protein.

3. (Canceled) ~~A method as claimed in claim 2 wherein the alteration is a truncating mutation.~~

4. (Currently Amended) A method as claimed in claim 1 wherein the alteration is one of the nucleotide changes identified in Table 3 as SMEI associated or non-SMEI associated.

5. (Canceled) ~~A method as claimed in claim 1 comprising performing one or more assays to test for the existence of an SCN1A alteration and to identify the nature of the alteration.~~

6. (Canceled) ~~A method as claimed in claim 5 wherein the performing one or more assays comprises:~~

~~(1) performing one or more assays to test for the existence of an alteration in the SCN1A gene of the patient; and if the results indicate the existence of an alteration in the SCN1A gene;~~

~~(2) performing one or more assays to identify the nature of the SCN1A alteration.~~

7. (Canceled) ~~A method as claimed in claim 5 wherein one of the assays is a DNA hybridisation assay.~~

8. (Canceled) ~~A method as claimed in claim 7 wherein an SCN1A gene probe, an SCN1A exon specific probe, or an SCN1A allele specific probe is hybridised to genomic DNA isolated from said patient.~~

9. (Canceled) ~~A method as claimed in claim 5 wherein one of the assays is high performance liquid chromatography.~~

10. (Canceled) ~~A method as claimed in claim 5 wherein one of the assays is an electrophoretic assay.~~

11. (Canceled) ~~A method as claimed in claim 5 wherein a sample DNA to be tested is quantitatively amplified for at least one exon of the SCN1A gene to produce amplified fragments and the length of the amplification products for each amplified exon is compared to the length of the amplification products obtained when a wild type SCN1A gene is amplified using the same primers, whereby differences in length between an amplified sample exon and the corresponding amplified wild type exon reflect the occurrence of a truncating alteration in the sample SCN1A gene.~~

12. (Canceled) ~~A method as claimed in claim 5 wherein one of the assays incorporates DNA amplification using SCN1A allele specific oligonucleotides.~~

13. (Canceled) ~~A method as claimed in claim 5 wherein one of the assays is SSCP analysis.~~

14. (Canceled) ~~A method as claimed in claim 5 wherein one of the assays is RNase protection.~~

15. (Canceled) ~~A method as claimed in claim 5 wherein one of the assays is DGGE.~~

16. (Canceled) ~~A method as claimed in claim 5 wherein one of the assays is an enzymatic assay.~~

17. (Canceled) ~~A method as claimed in claim 16 wherein said assay incorporates the use of MutS.~~

18-19. Withdrawn

20. (Canceled) ~~A method as claimed in claim 5 wherein one of the assays is DNA sequencing.~~

21. (Currently Amended) A method for determining the likelihood that a human patient suspected of SMEI does or does not have SMEI, comprising:

(1) ~~testing~~ screening a patient sample for the existence of an alteration in the SCN1A gene of the patient, including in a regulatory region of the gene, by sequencing the SCN1A gene;

(2) (a) terminating the process ~~with an inconclusive diagnosis~~ if no alteration is found, thereby establishing that the patient likely does not have SMEI; or

(b) identifying the alteration; and

(3) ascertaining whether the alteration, when one is detected, is as laid out in column 3 of Table 3 as SMEI associated or non-SMEI associated, or is not known to be either; wherein

(a) ~~a diagnosis which will indicate~~ the patient is categorized as having a high probability of having SMEI ~~is established~~ if a SMEI associated alteration as laid out in column 3 of Table 3 is identified,

(b) ~~a diagnosis which will indicate~~ the patient is categorized as having a low probability of having SMEI ~~is established~~ if a non-SMEI associated alteration as laid out in column 3 of Table 3 is identified, or

(c) further analysis is undertaken to establish ~~if the alteration is a SMEI associated or non-SMEI associated alteration~~ the likelihood the patient suspected of SMEI does or does not have SMEI when the detected alteration is not known to be either SMEI associated or non-SMEI associated,

wherein the detection of a SMEI associated alteration establishes that a patient suspected of SMEI likely does have SMEI.

22. - 23. Withdrawn

24. (Currently amended) A method as claimed in claim 1, ~~wherein the likelihood that the alteration is a SMEI associated alteration is established through~~ wherein the further analysis undertaken to establish the likelihood the patient suspected of SMEI does or does not have SMEI when the detected alteration is not known to be either SMEI associated or non-SMEI associated comprises:

(a) considering genetic data for parents or relatives; and

(b) establishing whether the alteration has arisen *de novo* or is inherited.

25. (Currently amended) A method as claimed in claim 2, comprising ~~establishing a diagnosis which will indicate~~ categorizing the patient as having a low probability of SMEI in the case of an inherited mutation, ~~and indicate~~ a high probability of SMEI in the case of a *de novo* mutation, and a very high probability of SMEI where a *de novo* mutation would result in a ~~major disruption~~ truncating alteration to the protein.